REMARKS

Applicant respectfully requests reconsideration and allowance of the subject application. Claims 30-31, 42-43, and 66-67 have been canceled. Claims 1-7, 10-29, 32, 37-41, 44-65, and 68-70 are pending, of which claims 1, 15, 20, 25, 32, 37, 44, 61, and 68 have been amended.

35 U.S.C. § 103 Claim Rejections

A. Claims 1-7, 14, 20, 22-24, and 45-54 are rejected under 35 U.S.C. §103(a) for obviousness over U.S. Patent No. 6,415,280 to Farber et al. (hereinafter, "Farber"), in view of U.S. Patent Publication No. 2002/0004917 to Malcolm et al. (hereinafter, "Malcolm") (*Office Action* p.2). Applicant respectfully traverses the rejection.

B. Claims 15 and 21 are rejected under 35 U.S.C. §103(a) for obviousness over Farber in view of Malcolm, and further in view of U.S. Patent Publication No. 2002/0083178 to Brothers (hereinafter, "Brothers") (*Office Action* p.7). Applicant respectfully traverses the rejection.

C. Claims 25-29, 37-41, 61-65, and 69 are rejected under 35 U.S.C. §103(a) for obviousness over Farber in view of Brothers, and further in view of U.S. Patent No. 5,359,659 to Rosenthal (hereinafter, "Rosenthal") (*Office Action* p.8). Applicant respectfully traverses the rejection.

D. Claims 10-13, 16-19, and 55-60 are rejected under 35 U.S.C. §103(a) for obviousness over Farber in view of Malcolm in view of Brothers, and further in view of U.S. Patent Publication No. 2002/0103712 to Rollins et al. (hereinafter, "Rollins") (Although Rosenthal is indicated initially, the discussion

cites to Rollins) (*Office Action* p.12).   Applicant respectfully traverses the rejection.

E.   Claims 30-32, 42-44, 66-68, and 70 are rejected under 35 U.S.C. §103(a) for obviousness over Farber in view of Brothers in view of Rosenthal, and further in view of Malcolm (*Office Action* pp. 15-16).   Applicant respectfully traverses the rejection.

Claim 1 recites: A network system, comprising:

a first device to maintain an original resource;

a second device to maintain a replica resource remotely from the first device, the replica resource being replicated from the original resource;

memory to store a cached descriptor corresponding to the original resource;

a security component to determine whether a request for the replica resource will pose a security risk to the second device where the request designates a resource locator, the security component further configured to determine whether the replica resource will pose a security risk to the second device upon receipt of a request for the replica resource, the security component configured to:

formulate a descriptor corresponding to the replica resource and compare the formulated descriptor with the cached descriptor; and

if the formulated descriptor and the cached descriptor are not equivalent, formulate a second descriptor corresponding to the original resource and compare the formulated descriptor with the second descriptor.

Farber and/or Malcolm do not teach or suggest several of the features recited in claim 1, such as "a security component to determine whether a request for the replica resource will pose a security risk to the second device".

The Office cites only Farber for teaching to determine whether the request for a replica resource will pose a security risk to the second device (that maintains the replica resource) (*Office Action* p.4). Applicant respectfully disagrees because there is no discussion of a request for a replica resource in the cited sections of Farber. Specifically, Farber describes:

> A "Verify True File" mechanism which is used to verify that a data item in a True File registry is indeed the correct data item given its True Name. Its purpose is to guard against device errors, malicious changes, or other problems. (*Farber* col.31, lines 26-30); and

> "In operation, data items in the system can be verified and have their integrity checked. This is from the manner in which True Names are determined. This can be used for security purposes, for instance, to check for viruses and to verify that data retrieved from another location is the desired, and requested data. For example, the system might store the True Names of all executable applications on the system and then periodically redetermine the True Names of each of these applications to ensure that they match the stored True Names. Any change in a True Name potentially signals corruption in the system and can be further investigated. The Verify Region background mechanism and the Verify True File extended mechanisms provide direct support for this mode of operation. The Verify Region mechanism is used to ensure that the data items in the True File registry have not been damaged accidentally or maliciously. The Verify True File mechanism verifies that a data item in a True File registry is indeed the correct data item given its True Name." (*Farber* col.34, lines 45-62).

There is no indication in either of these sections of Farber of a request for a replica resource, or of a "component to determine whether a request for the replica resource will pose a security risk", as recited in claim 1. Accordingly, claim 1 is

allowable over the Farber-Malcolm combination for at least this reason and the §103 rejection should be withdrawn.

Farber and/or Malcolm also do not teach or suggest "the security component further configured to determine whether the replica resource will pose a security risk to the second device <u>upon receipt of a request for the replica resource</u>", as recited in claim 1. The Office cites to the same two sections of Farber that are provided above (*Farber* col.31, lines 26-30; col.34, lines 45-62) (*Office Action* p.4).

However, there is no discussion in the two cited sections of Farber of receipt of a request for a resource, nor is there any indication of an action to determine whether a resource poses a security risk upon receiving the request for the resource. Farber only describes that data items can be verified and have their integrity checked for security purposes and to ensure that the data items have not been damaged.

The Office only cites Malcolm for a request that designates a resource locator (*Malcolm* ¶[0068], ¶[0077]) (*Office Action* p.4). As with Farber, there is no indication of an action to determine whether a resource poses a security risk upon receiving a request for the resource in the two cited sections of Malcolm. Accordingly, claim 1 is also allowable over the Farber-Malcolm combination for at least this reason and the §103 rejection should be withdrawn.

Farber and/or Malcolm also do not teach or suggest a security component configured to "formulate a descriptor corresponding to the replica resource and

compare the formulated descriptor with the cached descriptor", as recited in claim 1. As is evident in claim 1, the cached descriptor corresponds to the original resource and the formulated descriptor corresponds to the replica resource.

The Office cites Malcolm at paragraphs [0042] and [0077] for comparing a formulated descriptor with a cached descriptor (*Office Action* p.4). The cited sections of Malcolm, however, do not teach comparing a formulated descriptor that corresponds to a replica of a resource to a cached descriptor that corresponds to the original resource, as recited in claim 1. Specifically, Malcolm only describes:

> The cache engine 100 can provide a mirror site to one or more server devices 111, by periodically, or upon request, receiving network objects 114 from the server devices 111 to be delivered by the server device 111 to client devices 111 which have changed in a selected time period such as one day. (*Malcolm* ¶[0042]); and

> The cache engine 100 uses the hash function 320 and the hash table 350 to identify an object 210 (and thus one or more data blocks 200) associated with the URL 310 (and thus associated with the network object 114). The cache engine 100 operates on the object 210 to retrieve from the cache 102 the network object 114 requested by the HTTP request, and to deliver that network object 114 to the client device 111. The cache engine 100 maintains the cache 102 using the memory 103 and the mass storage 104 so that whether the object 210 is in the cache 102, and if in the cache 102, whether the object 210 is in the memory 103 or on the mass storage 104 is transparent to the client device 111 (except possibly for different time delays in retrieving the object 210 from the memory 103 or from the mass storage 104). (*Malcolm* ¶[0077]).

Malcolm only describes that network objects are delivered by a server device to client devices (¶[0042], ¶[0077]), and that a cache engine uses a hash function and a hash table to identify a network object associated with a URL to

retrieve the network object (¶[0077]. There is no indication in either of these sections of Malcolm of comparing a formulated descriptor that corresponds to a replica of a resource with a cached descriptor that corresponds to the original resource, as recited in claim 1.

The Office also cites to the same two sections of Farber that are provided above (*Farber* col.31, lines 26-30; col.34, lines 45-62) for comparing a formulated descriptor with a cached descriptor (*Office Action* p.4). The Office also considers it "to be inherent as the only way to verify the true object by using the given True Name (i.e. Object Descriptor) for resource integrity validation" (*Office Action* p.4).

As with Malcolm, there is no indication in either of these sections of Farber that a formulated descriptor which corresponds to a replica of a resource is compared with a cached descriptor that corresponds to the original resource, as recited in claim 1. Farber only describes a mechanism to verify the integrity of a data item by redetermining the True Name of a data item to ensure that it matches a stored True Name of the data item. Farber compares a redetermined True Name of a data item to a stored True Name of the <u>same</u> data item. Farber does not compare descriptors of at least two different data items, such as a formulated descriptor of a resource replica compared to a cached descriptor of the original resource, as recited in claim 1. As such, Applicant disagrees with the Office's conclusion that Farber inherently provides the only way to verify resource integrity.

Accordingly, claim 1 is also allowable over the Farber-Malcolm combination for at least this reason and the §103 rejection should be withdrawn.

Farber and/or Malcolm also do not teach or suggest that "if the formulated descriptor and the cached descriptor are not equivalent", the security component is configured to "formulate a second descriptor corresponding to the original resource and compare the formulated descriptor with the second descriptor", as recited in claim 1. As is evident in claim 1, both the cached descriptor and the second descriptor correspond to the original resource, and the formulated descriptor corresponds to the replica resource.

The Office cites to a section of Farber that only describes how a True Name of a data block is computed (*Office Action* p.4; *Farber* col.12, lines 38-43). There is no indication in this section of Farber that descriptors corresponding to an original resource and to a replica resource are compared.

The Office also cites to Malcolm ¶[0042], which is provided above, and ¶[0105] (*Office Action* p.4). Malcolm only describes that network objects are delivered by a server device to client devices (¶[0042]), and that original control blocks are replaced with modified control blocks (¶[0105]). There is no indication in these sections of Malcolm that descriptors corresponding to an original resource and to a replica resource are compared. Further, Malcolm states that the original control blocks are replaced with modified control blocks "[b]ecause no data block 200 is rewritten in place" (¶[0105]). Clearly, the purpose stated in this section of Malcolm provides no basis to reject that a security component is configured to "formulate a second descriptor corresponding to the original resource and compare the formulated descriptor with the second descriptor", as recited in claim 1.

Accordingly, claim 1 is also allowable over the Farber-Malcolm combination for at least this reason and the §103 rejection should be withdrawn.

In summary, Farber and/or Malcolm do not teach or suggest many of the features recited in claim 1. Specifically, the combination fails to disclose:

- a security component to determine whether a request for the replica resource will pose a security risk to the second device

- the security component further configured to determine whether the replica resource will pose a security risk to the second device upon receipt of a request for the replica resource

- a security component configured to "formulate a descriptor corresponding to the replica resource and compare the formulated descriptor with the cached descriptor

- if the formulated descriptor and the cached descriptor are not equivalent, the security component is configured to formulate a second descriptor corresponding to the original resource and compare the formulated descriptor with the second descriptor

Accordingly, claim 1 is allowable over the Farber-Malcolm combination for at least any one of these many reasons, and Applicant respectfully requests that the §103 rejection be withdrawn.

Claims 2-7 are allowable by virtue of their dependency upon independent claim 1. Additionally, some or all of claims 2-7 are allowable over the Farber-Malcolm combination for at least the reasons described above in response to the rejection of claim 1. Specifically, Farber and/or Malcolm do not teach or suggest a cached descriptor that corresponds to an original resource, a second descriptor that corresponds to the original resource, and/or a formulated descriptor that corresponds to a replica resource (of the original resource).

Claims 10-13 are allowable by virtue of their dependency upon independent claim 1, and are allowable over Farber and/or Malcolm for at least the reasons described above in response to the rejection of claim 1. Claims 10-13 are also allowable over the Farber-Malcolm-Brothers-Rollins combination because neither Brothers nor Rollins address the deficiencies of Farber and/or Malcolm as described above in response to the rejection of claim 1.

Claims 14 and 20 are rejected in a group along with claim 1, and for the same reasons as claim 1 (*Office Action* p.3). Accordingly, claims 14 and 20 are allowable over the Farber-Malcolm combination for at least any of the reasons described above in response to the rejection of claim 1. Specifically:

Claim 14 recites (in part) a security component being configured to:

> determine whether a request for a resource will pose a security risk;

> formulate a replica descriptor corresponding to a replica of the resource and compare the replica descriptor with the cached descriptor; and

> if the replica descriptor and the cached descriptor are not equivalent, formulate a second descriptor corresponding to the resource and compare the replica descriptor with the second descriptor.

Claim 20 recites (in part) a security component being configured to:

> determine whether the resource will pose a security risk to the network server upon receipt of the request;

> formulate a replica descriptor corresponding to a replica of the resource and compare the replica descriptor with the cached descriptor; and

if the replica descriptor and the cached descriptor are not equivalent, formulate a second descriptor corresponding to the resource and compare the replica descriptor with the second descriptor.

As described above in the response to the rejection of claim 1, Farber and/or Malcolm do not teach or suggest a security component to determine whether a request for a resource will pose a security risk (claim 14), or a security component to determine whether the resource will pose a security risk to a network server upon receipt of the request (claim 20).

Further, Farber and/or Malcolm do not teach or suggest a security component configured to "formulate a replica descriptor corresponding to a replica of the resource and compare the replica descriptor with the cached descriptor", or "if the replica descriptor and the cached descriptor are not equivalent", the security component being configured to "formulate a second descriptor corresponding to the resource and compare the replica descriptor with the second descriptor", as recited in claims 14 and 20. Farber and/or Malcolm do not compare descriptors of at least two different data items, such as a replica descriptor of a resource replica compared to a cached descriptor of the original resource.

Claim 20 also recites a server component in a network server receives a request for a resource maintained on the network server, and that the security component is in a computing device remote to the network server and registerable with the server component in the network server. Farber and/or Malcolm do not describe any such system configuration, nor has the Office provided any basis to substantiate the §103 rejection of the system configuration in claim 20.

Accordingly, independent claims 14 and 20 are allowable over the Farber-Malcolm combination for at least any one of these many reasons, and Applicant respectfully requests that the §103 rejection be withdrawn.

Claim 15 is allowable by virtue of its dependency upon independent claim 14, and is allowable over Farber and/or Malcolm for at least the reasons described above in response to the rejection of claims 1 and 14. Claim 15 is also allowable over the Farber-Malcolm-Brothers combination because Brothers does not address the deficiencies of Farber and/or Malcolm as described above in response to the rejection of claims 1 and 14.

Further, Brothers does not teach that "if the security component determines that the request will pose a security risk to the network server, the security component redirects the request to indicate that the resource is not available", as recited in claim 15. The Office cites Brothers for indicating that a file is not found, and concludes that it would have been obvious to combine Brothers with Farber because Brothers teaches a system of secure content that allows clients or users to access the data content if authorized (*Office Action* pp. 7-8). Brothers also describes that if access to a resource is not authorized, a resource request is passed to a request termination processing module (*Brothers* ¶[0166]).

As noted by the Office, Brothers describes that access to a resource may be restricted if a user is not authorized to access the resource. Contrary to the "authorization" criteria described in Brothers, claim 15 specifically recites that a request for a resource is redirected if it is determined that the request will pose a

security risk to a network server – not if it is determined that a user is not authorized to access the data, as in Brothers.

Accordingly, claim 15 is also allowable over the Farber-Malcolm-Brothers combination for at least this reason and the §103 rejection should be withdrawn.

Claims 16-19 are allowable by virtue of their dependency upon independent claim 14, and are allowable over Farber and/or Malcolm for at least the reasons described above in response to the rejection of claims 1 and 14. Claims 16-19 are also allowable over the Farber-Malcolm-Brothers-Rollins combination because neither Brothers nor Rollins address the deficiencies of Farber and/or Malcolm as described above in response to the rejection of claims 1 and 14.

Claims 21-24 are allowable by virtue of their dependency upon independent claim 20, and are allowable over Farber and/or Malcolm for at least the reasons described above in response to the rejection of claims 1 and 20.

Claim 21 is also allowable over the Farber-Malcolm-Brothers combination because Brothers does not address the deficiencies of Farber and/or Malcolm as described above in response to the rejection of claims 1 and 20.

Claims 22-24 are also allowable for the reasons described above in response to the rejection of claims 2-7. Specifically, Farber and/or Malcolm do not teach or suggest a cached descriptor that corresponds to a resource, a second descriptor that corresponds to an original resource, and/or a formulated descriptor that corresponds to the resource replicated from the original resource.

Claim 25 recites (in part) a validation component to determine whether a request will pose a security risk to the network server, and an integrity verification component to:

determine whether the resource will pose a security risk to the network server upon receipt of the request;

formulate a descriptor corresponding to the resource;

compare the formulated descriptor with a cached descriptor, the cached descriptor corresponding to the resource and formulated when the resource is initially requested;

determine that the resource is not a security risk if the formulated descriptor and the cached descriptor are equivalent;

if the formulated descriptor and the cached descriptor are not equivalent, formulate a second descriptor corresponding to an original resource maintained on a file server remotely located from the network server, the resource being replicated from the original resource;

compare the formulated descriptor with the second descriptor; and

determine that the resource is not a security risk if the formulated descriptor and the second descriptor are equivalent.

Claim 25 is amended herein to incorporate features recited in claims 30 and 31 (now canceled). As described above in the response to the rejection of claim 1, Farber and/or Malcolm do not teach or suggest a component to determine whether a request for a resource will pose a security risk, or a component to determine whether the resource will pose a security risk to the network server upon receipt of the request, as recited in claim 25.

Further, Farber and/or Malcolm do not teach or suggest a component configured to "formulate a second descriptor corresponding to an original resource" and "compare the formulated descriptor with the second descriptor", or "determine that the resource is not a security risk if the formulated descriptor and the second descriptor are equivalent", as recited in claim 25. Farber and/or Malcolm do not compare descriptors of at least two different data items, such as a formulated descriptor of a resource that is replicated from an original resource compared to a second descriptor of the original resource.

As such, claim 25 is allowable over Farber and/or Malcolm for at least the reasons described above. Claim 25 is also allowable over Brothers and/or Rosenthal because neither addresses the deficiencies of Farber or Malcolm as described above, and the Office has not cited to Brothers or Rosenthal for the deficient teachings of Farber and Malcolm.

Accordingly, claim 25 is allowable over any combination of Farber, Malcolm, Brothers, and Rosenthal, and Applicant respectfully requests that the §103 rejection be withdrawn.

Claims 26-29 and 32 are allowable by virtue of their dependency upon independent claim 25, and are allowable over Farber, Malcolm, Brothers, and/or Rosenthal for at least the reasons described above in response to the rejection of claims 1 and 25.

Claim 37 recites (in part) a validation component to determine whether a request for a resource poses a security risk, and an integrity verification component to:

> determine whether the resource poses a security risk;

> formulate a descriptor corresponding to the resource when the security application receives the request;

> compare the formulated descriptor with a cached descriptor, the cached descriptor corresponding to the resource and formulated when the resource is initially requested;

> if the formulated descriptor and the cached descriptor are not equivalent, formulate a second descriptor corresponding to an original resource remotely located, the resource being replicated from the original resource;

> compare the formulated descriptor with the second descriptor; and

> determine that the resource is not a security risk if the formulated descriptor and the second descriptor are equivalent.

Claim 37 is amended herein to incorporate features recited in claims 42 and 43 (now canceled). As described above in the response to the rejection of claim 1, Farber and/or Malcolm do not teach or suggest a component to determine whether a request for a resource poses a security risk, or a component to determine whether the resource will pose a security risk upon receipt of the request, as recited in claim 37.

Further, Farber and/or Malcolm do not teach or suggest a component configured to "formulate a second descriptor corresponding to an original resource" and "compare the formulated descriptor with the second descriptor", or

"determine that the resource is not a security risk if the formulated descriptor and the second descriptor are equivalent", as recited in claim 37. Farber and/or Malcolm do not compare descriptors of at least two different data items, such as a formulated descriptor of a resource that is replicated from an original resource compared to a second descriptor of the original resource.

As such, claim 37 is allowable over Farber and/or Malcolm for at least the reasons described above. Claim 37 is also allowable over Brothers and/or Rosenthal because neither addresses the deficiencies of Farber or Malcolm as described above, and the Office has not cited to Brothers or Rosenthal for the deficient teachings of Farber and Malcolm.

Accordingly, claim 37 is allowable over any combination of Farber, Malcolm, Brothers, and Rosenthal, and Applicant respectfully requests that the §103 rejection be withdrawn.

Claims 38-41 and 44 are allowable by virtue of their dependency upon independent claim 37, and are allowable over Farber, Malcolm, Brothers, and/or Rosenthal for at least the reasons described above in response to the rejection of claims 1 and 37.

Claim 45 is rejected along with claim 1, and for the same reasons as claim 1 (*Office Action* pp. 3, 7). Accordingly, claim 45 is allowable over the Farber-Malcolm combination for at least any of the reasons described above in response to the rejection of claim 1. Specifically, Farber and/or Malcolm do not teach or suggest formulating a descriptor corresponding to a replica resource of an

original resource, and comparing the formulated descriptor with a cached descriptor corresponding to the original resource, as recited in claim 45. Further, Farber and/or Malcolm do not teach or suggest comparing the formulated descriptor with a second descriptor that corresponds to the original resource. Farber and/or Malcolm do not compare descriptors of at least two different data items, such as a formulated descriptor of a replica resource compared to a cached descriptor of the original resource.

Accordingly, independent claim 45 is allowable over the Farber-Malcolm combination for at least any one of these many reasons, and Applicant respectfully requests that the §103 rejection be withdrawn.

Claims 46-60 are allowable by virtue of their dependency upon independent claim 45. Additionally, some or all of claims 46-60 are allowable over the Farber-Malcolm combination for at least the reasons described above in response to the rejection of claims 1 and 45. Claims 55-60 are also allowable over the Farber-Malcolm-Brothers-Rollins combination because neither Brothers nor Rollins address the deficiencies of Farber and/or Malcolm as described above in response to the rejection of claims 1 and 45.

Claim 61 is rejected along with claim 25, and for the same reasons as claim 25 (*Office Action* pp. 8, 12). Accordingly, claim 61 is allowable over the Farber-Malcolm combination for at least any of the reasons described above in response to the rejection of claim 25. Claim 61 is also allowable over Brothers and/or Rosenthal because neither addresses the deficiencies of Farber or Malcolm

as described above, and the Office has not cited to Brothers or Rosenthal for the deficient teachings of Farber and Malcolm.

Accordingly, independent claim 61 is allowable over any combination of Farber, Malcolm, Brothers, and Rosenthal, and Applicant respectfully requests that the §103 rejection be withdrawn.

Claims 62-65 and 68-70 are allowable by virtue of their dependency upon independent claim 61, and are allowable over Farber, Malcolm, Brothers, and/or Rosenthal for at least the reasons described above in response to the rejection of claims 1 and 61.

Conclusion

Pending claims 1-7, 10-29, 32, 37-41, 44-65, and 68-70 are in condition for allowance. Applicant respectfully requests reconsideration and issuance of the subject application. If any issues remain that preclude issuance of this application, the Examiner is urged to contact the undersigned attorney before issuing a subsequent Action.

Respectfully Submitted,

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